

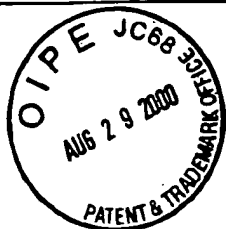
OMB No. 0651-0011

INFORMATION DISCLOSURE CITATION
(Use several sheets if necessary)

Atty. Docket No.	7691.0004	Serial No.	09/599,877			
Applicant	Johan LENNERSTRAND et al.					
Filing Date	June 23, 2000	Group	Not Yet Assigned			
U.S. PATENT DOCUMENTS						
Examiner Initial*	Document Number	Date	Name	Class	Sub Class	Filing Date If Appropriate
J	6,046,056	04/04/00	Parce et al.	436	514	12/06/96
J	5,985,215	11/16/99	Sakazume et al.	422	67	09/22/97
FOREIGN PATENT DOCUMENTS						
	Document Number	Date	Country	Class	Sub Class	Translation Yes or No
J	WO 99/67639	12/29/99	PCT			
J	WO 99/30154	06/17/99	PCT			
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)						
201	Arion et al., "Phenotypic Mechanism of HIV-1 Resistance to 3' -Azido-3' -Deoxythymidine (AZT): Increased Polymerization Processivity and Enhanced Sensitivity to Pyrophosphate of the Mutant Viral Reverse Transcriptase," <i>Biochemistry</i> , 37, pp. 15908-15917 (1998).					
2	Canard et al., "Enhanced Binding of Azidothymidine-Resistant Human Immunodeficiency Virus 1 Reverse Transcriptase to the 3' -Azido-3' -Deoxythymidine 5' -Monophosphate-terminated Primer," <i>The Journal of Biological Chemistry</i> , Vol. 273, 23, pp. 14596-14604 (1998).					
3	Carroll et al., "Sensitivity of HIV-1 Reverse Transcriptase and Its Mutant to Inhibition by Azidothymidine Triphosphate," <i>Biochemistry</i> , 33, pp. 2113-2120 (1994).					
X	Coffin, J.M., "HIV Population Dynamics in Vivo: Implications for Genetic Variation, Pathogenesis, and Therapy," <i>Science</i> , Vol. 267 (1995).					
5	Ekstrand et al., "A Sensitive Assay for the Quantification of Reverse Transcriptase Activity Based on the Use of Carrier-Bound Template and Non-Radioactive-Product Detection, with Special Reference to Human-Immunodeficiency-Virus Isolation," Vol. 23, pp. 95-105 (1996).					
6	Furman et al., "Phosphorylation of 3'-Azido-3' -Deoxythymidine and Selective Interaction of the 5'-Triphosphate with Human Immunodeficiency Virus* Reverse Transcriptase," <i>Proc. Natl. Acad. Sci. USA</i> , Vol. 83, pp. 8333-8337 (1986).					
7	Harada et al., "Infection of HTLV-III/LAV in HTLV-1-Carrying Cells MT-2 and MT-4 and Application in a Plaque Assay," <i>Science</i> , Vol. 229, pp. 563-567 (1985).					

2	Harrigan et al., "Significance of Amino Acid Variation at Human Immunodeficiency Virus Type 1 Reverse Transcriptase Residue 210 for Zidovudine Susceptibility," <i>Journal of Virology</i> , Vol. 70, No. 9, pp. 5930-5934 (1996).
9	Hertogs et al., "A Rapid Method for Simultaneous Detection of Phenotypic Resistance to Inhibitors of Protease and Reverse Transcriptase in Recombinant Human Immunodeficiency Virus Type 1 Isolates from Patients Treated with Antiretroviral Drugs," <i>Antimicrobial Agents and Chemotherapy</i> , Vol. 42, 2, pp. 269-276 (1998).
10	Huang et al., "Structure of a Covalently Trapped Catalytic Complex of HIV-1 Reverse Transcriptase: Implications for Drug Resistance," <i>Science</i> , Vol. 282, pp. 1669-1675 (1998).
11	Kellam et al., "Recombinant Virus Assay: A Rapid, Phenotypic Assay for Assessment of Drug Susceptibility of Human Immunodeficiency Virus Type 1 Isolates," <i>Antimicrobial Agents and Chemotherapy</i> , Vol. 38, 1, pp. 23-30 (1994).
12	Kellam et al., "Fifth Mutation in Human Immunodeficiency Virus Type 1 Reverse Transcriptase Contributes to the Development of High-Level Resistance to Zidovudine," <i>Proc. Natl. Acad. Sci. USA</i> , Vol. 89, pp. 1934-1938 (1992).
13	Krebs et al., "Single-Step Kinetics of HIV-1 Reverse Transcriptase Mutants Responsible for Virus Resistance to Nucleoside Inhibitors Zidovudine and 3-TC," <i>Biochemistry</i> , 36, pp. 10292-10300 (1997).
14	Lacey et al., "Biochemical Studies on the Reverse Transcriptase and RNase H Activities from Human Immunodeficiency Virus Strains Resistant to 3'-Azido-3'-deoxythymidine*," <i>The Journal of Biological Chemistry</i> , Vol. 267, 22, pp. 15789-15794 (1992).
15	Larder et al., "Multiple Mutations in HIV-1 Reverse Transcriptase Confer High-Level Resistance to Zidovudine (AZT)," <i>Science</i> , Vol. 246, pp. 1155-1158 (1989).
16	Larder et al., "A Family of Insertion Mutations Between Codons 67 and 70 of Human Immunodeficiency Virus Type 1 Reverse Transcriptase Confer Multinucleoside Analog Resistance," <i>Antimicrobial Agents and Chemotherapy</i> , Vol. 43, No. 8, p. 1961-1967 (1999).
17	Larder et al., "Quantitative Detection of HIV-1 Drug Resistance Mutations by Automated DNA Sequencing," <i>Nature</i> , Vol. 365, pp. 671-675 (1993).
18	Larder et al., "Related Functional Domains in Virus DNA Polymerases," <i>The EMBO Journal</i> , Vol. 6, 1, pp. 169-175 (1987).
19	Lardner et al., "HIV with Reduced Sensitivity to Zidovudine (AZT) Isolated During Prolonged Therapy," <i>Science</i> , Vol. 243, pp. 1731-1734 (1989).
20	Lennerstrand et al., "Application of a Chain Termination Assay for Characterization of Reverse Transcriptase from AZT-Resistant HIV Isolates," <i>Antiviral Chemistry & Chemotherapy</i> , Vol. 7, 6, pp. 313-320 (1996).
	Meyer et al., "A Mechanism of AZT Resistance: An Increase in Nucleotide-Dependent Primer Unblocking by Mutant HIV-1 Reverse Transcriptase," <i>Molecular Cell</i> , Vol. 4, pp. 35-43 (1999).
22	Ren et al., "3'-Azido-3'-Deoxythymidine Drug Resistance Mutations in HIV-1 Reverse Transcriptase can Induce Long Range Conformational Changes," <i>Proc. Natl. Acad. Sci. USA</i> , Vol. 95, pp. 9518-9523 (1998).
23	Schinazi et al., "Mutations in Retroviral Genes Associated with Drug Resistance," <i>International Antiviral News</i> , Vol. 5, 8, pp. 129-142 (1997).
24	Shao et al., "A Non-Radioactive Microtitre Plate Reverse Transcriptase (RT) Assay, Based on Immobilized Template, for Screening of RT Activity Inhibitors and Evaluation of their Mode of Action," <i>Antiviral Chemistry and Chemotherapy</i> , Vol. 8, 2, pp. 149-159 (1997).
25	Shirasaka et al., "Emergence of Human Immunodeficiency Virus Type 1 variants with Resistance to Multiple Dideoxynucleosides in Patients Receiving Therapy with Dideoxynucleosides," <i>Proc. Natl. Acad. Sci. USA</i> , Vol. 92, pp. 2398-2402, (1995).

26	Stammers et al., "Crystals of HIV-1 Reverse Transcriptase Diffracting to 2.2 Å Resolution," <i>J. Mol. Biol.</i> , Vol. 242, pp. 586-588 (1994).
	Ueno et al., "Enzymatic Characterization of Human Immunodeficiency Virus Type 1 Reverse Transcriptase Resistant to Multiple 2',3' -Dideoxynucleoside 5' -Triphosphates", <i>The Journal of Biological Chemistry</i> , Vol. 270, 40, pp. 23605-23611 (1995).
28	Winters et al., "A 6-Basepair Insert in the Reverse Transcriptase Gene of Human Immunodeficiency Virus Type 1 Confers Resistance to Multiple Nucleoside Inhibitors," <i>The Journal of Clinical Investihgation</i> , Vol. 102, 10, pp. 1769-1775 (1998).
Examiner	Date Considered 01/10/02
*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	
Form PTO 1449 Patent and Trademark Office - U.S. Department of Commerce	



PTO 892 DEAFCE 1994 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE NOTICE OF REFERENCES CITED		SERIAL NUMBER 09/599,877	Art Unit 1648	Attachment to Paper Number 7				
APPLICANTS : Lennerstrand, J. and B. Larder								
U.S. PATENT DOCUMENTS								
*		DOCUMENT NUMBER	DATE	NAME(S)	CLASS	SUBCLASS	FILING DATE	
FOREIGN PATENT DOCUMENTS								
*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS	PERTINENT DRW SPEC
*		OTHER REFERENCES (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)						
1	*	Ekstrand, D. H. L., et al., 1996, "A sensitive assay for the quantification of reverse transcriptase activity based on the use of carrier-bound template and non-radioactive product detection, with special reference to human-immunodeficiency-virus isolation", Biotechnol. Appl. Biochem. 23:95-105.						
2	*	Meyer, P. R., et al., 1999, "A mechanism of AZT resistance: an increase in nucleotide-dependent primer unblocking by mutant HIV-1 reverse transcriptase", Mol. Cell 4:35-43.						
3	*	Arion, D., et al., 1998, "Phenotypic mechanism of HIV-1 resistance to 3'-Azido-3'-deoxythymidine (AZT): increased polymerization processivity and enhanced sensitivity to pyrophosphate of the mutant viral reverse transcriptase", Biochem. 37:15908-15917.						
4	*	Ueno, T., et al., 1995, "Enzymatic characterization of human immunodeficiency virus type 1 reverse transcriptase resistant to multiple 2',3'-dideoxynucleoside 5'-triphosphates", J. Biol. Chem. 270(4):23605-23611.						
a	5	Larder, B. A. and D. K. Stammers, 1999, "Closing in on HIV drug resistance", Nature Struct. Biol. 6(2):103-106.						
b	*	Larder, B. A., et al., 1999, "A family of insertion mutations between codons 67 and 70 of human immunodeficiency virus type 1 reverse transcriptase confer multinucleoside analog resistance", Antimicrob. Agents Chemother. 43(6):1961-1967.						

EXAMINER Jeffrey S. Parkin, Ph.D.	DATE 01/10/02	* A COPY OF THIS REFERENCE IS NOT BEING FURNISHED WITH THIS OFFICE ACTION. (SEE MPEP SECTION 707.05(a)). PAGE 1 OF 1
------------------------------------------	----------------------	-----------------------------------------------------------------------------------------------------------------------------